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ABSTRACT

During 1980-81, the Energy Assistance Office of the Ohio Department of Education conducted a survey to determine the existing status of energy education awareness and needs among Ohio teachers. Nearly 1700 teachers engaged in or interested in energy education returned questionnaires, and the results of the study are summarized in this report. Responding teachers overwhelmingly agreed that energy education is an important curriculum area, but 74% indicated that they do not have energy education materials. Analysis of survey data also revealed the kinds of inservice education and other assistance needed by Ohio teachers. A copy of the questionnaire is included, along with a breakdown of data by numbers and percentages and a list of open-ended comments. (WB)

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ED204175

TEACHER ENERGY EDUCATION SURVEY

U.S. DEPARTMENT OF HEALTH,
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State of Ohio
Department of Education
Energy Assistance Office
Columbus

SE 035 361



STATE OF OHIO
DEPARTMENT OF EDUCATION
COLUMBUS
43215

FRANKLIN B. WALTER
SUPERINTENDENT OF
PUBLIC INSTRUCTION

April 14, 1981

HARRY R. MEEK
MANAGER, ENERGY ASSISTANCE OFFICE
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Since 1977 the Ohio Department of Education has successfully and extensively acted upon a strong commitment to improved and efficient energy management in schools through the operations and activities of its Energy Assistance Office. For three years the office has been serving as the key vehicle in the State of Ohio for educating school administrators, business officials and maintenance personnel regarding potential school building opportunities in the area of energy management.

As a result, the Energy Assistance Office has made significant strides toward achieving the educational objectives of the Department of Education regarding the role of the physical facility in school energy management. During the winter of 1980-81, it launched an additional major effort toward the energy education of teachers and students. In approaching the comprehensive area of energy education the Energy Assistance Office, in a cooperative venture with utility and university personnel, engaged in a two-pronged investigation of the existing state-of-the-art.

The first of two concurrent investigative efforts focused on the establishment of a working knowledge of existing energy education programs nationwide. The second concentrated on determining the existing status of energy education awareness, materials and programs within the State of Ohio.

As a means of pursuing the latter state-wide investigation, the Energy Assistance Office, together with its respective committee members,



designed and distributed its "Teacher Energy Education Survey". Dr. Franklin B. Walter, Superintendent of Public Instruction, issued a written request to each of Ohio's city, local, exempted village and joint vocational school superintendents to reproduce the survey and distribute it to teachers who were already engaged in energy education activities as well as those interested in initiating such activities.

Nearly 1700 Teacher Energy Education Surveys were completed by practicing teachers and were returned to the Energy Assistance Office. Compilation and tabulation of completed surveys generated interesting, if not surprising, results regarding the status of energy education throughout Ohio.

Ninety-five percent of teachers completing the survey either "strongly agreed" or "agreed" that energy education is an important curriculum area for the 1980's. Yet, 74 percent indicated that they are not now receiving any energy-related educational literature, publications, curriculum materials or other resources.

These two results together provide the staff of the Energy Assistance Office with an initial glimpse of the immensity of the task at hand. The combined conclusion that energy education is perceived by responding teachers as being an area of major importance and that the majority of respondents do not now have the means for its implementation, provides both enlightenment and direction in its implications.

Forty-three percent of respondents were K-6 teachers and 56 percent taught in grades 7-12. It was originally anticipated that a larger percentage of respondents would be science teachers. However, the resulting 22 percent response from science teachers was only slightly larger than teachers of language arts (17 percent), mathematics (17 percent), reading (16 percent) and social studies (15 percent). These results serve to specify the preceding conclusion even further. That is, in the development of energy

education program materials to meet this vital curriculum area of the 1980's, the Ohio Department of Education should pursue an interdisciplinary approach. Energy education is being perceived by responding teachers not as the exclusive domain of science teachers, but as the responsibility of a number of curriculum areas.

The Teacher Energy Education Survey went further and asked teachers to indicate and prioritize the kinds of help they need to incorporate energy education into their existing curriculum programs. Of the four choices provided to teachers for ranking, three emerged as too close to discriminate among. These are (1) teachers need to learn how energy information and energy-related issues can be incorporated effectively into the course of study, 30 percent; (2) teachers need to learn more about energy and energy-related issues, 29 percent, and (3) teachers need to receive sample lessons and activities on energy and energy-related issues, 28 percent. Only 13 percent indicated that teachers need to learn how to develop energy education units of study.

Essentially, results thus far represent a virtual mandate from teacher respondents to the Ohio Department of Education. That is, not only are responding teachers lacking program materials for an adequate energy education program which they themselves perceive as important for the 1980's, but they indicate that such materials should be interdisciplinary. Respondents further indicated that energy education program materials should also include awareness of energy and energy-related issues, procedures for incorporating energy education into existing curriculum programs plus, sample lessons and activities.

When asked to also prioritize specific resources that teachers need for incorporating energy education through existing curriculum areas; respondents ranked individual student materials and activities (23 percent), teacher

inservice (13 percent), 16mm films (13 percent), wall charts and bulletin board material (11 percent) and classroom speakers (10 percent) as high priorities.

In anticipation of the desirability of providing energy education inservice preparation to Ohio's teachers, the Energy Assistance Office included additional survey items regarding the level and format of prospective inservice programming. Inservice sessions at the school building and school district levels emerged as the most beneficial, 88 percent. Three of the five choices of inservice format emerged as desirable: (1) full-day, 30 percent; (2) half-day or less, 27 percent; and (3) sequential half-days, 25 percent.

These results indicate a preference for localized inservice assistance and released time to adequately prepare for incorporating energy education into existing curriculum areas. Topical areas of teacher interest centered on (1) energy conservation, 32 percent; (2) environmental issues, 21 percent; (3) energy sources, 19 percent; and energy economics 16 percent.

Since the Energy Assistance Office understands the effectiveness of teacher input into curriculum development, the survey concluded with a request for an indication of teacher willingness to participate in energy education program development. Forty-five percent of teacher respondents indicated such a willingness to participate. Of these, 83 percent indicated a desire to participate by reviewing and critiquing materials, 35 percent were willing to assist other teachers while 19 percent volunteered to consider serving as inservice presenters.

As indicated previously, survey results are most revealing in specifying the extensiveness of the task of developing energy education curriculum materials and preparing teachers for effective program implementation. The following not only summarizes survey results but serves to pinpoint respective

components that are considered by teachers as important for inclusion within the prospective energy education program of the Ohio Department of Education.

1. Energy Education is an important curriculum area of the 1980's.
2. The majority of teachers in Ohio do not now have, nor are they receiving, energy education material.
3. Elementary and secondary school teachers both have an interest in energy education.
4. Interest in implementing an energy education program is interdisciplinary.
5. Teachers need assistance in energy education programming through
 - a. Awareness of energy and energy-related issues
 - b. Procedures for effectively incorporating energy education into existing curriculum programs
 - c. Sample energy education lessons and activities
6. Teachers need energy education resource assistance including,
 - a. Individual student materials and activities
 - b. Teacher inservice
 - c. 16mm films
 - d. Wall charts and bulletin board material
 - e. Classroom speakers
7. Teachers prefer energy education inservice preparation programs at the building or district levels vis-a-vis a format that encompasses a half-day, a full-day or sequential half-days.
8. Teachers are primarily interested in learning more about
 - a. Energy Conservation
 - b. Environmental Issues
 - c. Energy Sources
 - d. Energy Economics
9. Teachers are willing to participate in energy education curriculum development through

- a. Reviewing and critiquing materials
- b. Assisting other teachers
- c. Serving as inservice presenters

The teaching community of the State of Ohio has spoken. The task remains with the Department of Education to effectively meet the important curriculum needs confronting the total education community in Ohio.

The Energy Assistance Office is beginning preliminary development of an effective K-12 energy education program in full consideration of recommendations of the teaching community. Program development is expected to proceed quickly in preparation for pilot testing in the fall of 1981, modification of materials by January, 1982, and packaging of the final program product by February 1, 1982. Teacher preparation workshops and program dissemination are expected to cover the State of Ohio during February and March of 1982.

TEACHER ENERGY EDUCATION SURVEY

A. INTRODUCTORY INFORMATION

1. Teacher Completing Survey _____
 School District _____ County _____
 School Building _____
 Building Address _____
 (Street) (City) (Zip)
 Telephone Number () _____
2. Level of Instruction (grades)
 ___ K-3 ___ 4-6 ___ 7-9 ___ 10-12
3. Subject Areas Taught
 ___ Reading
 ___ Language Arts
 ___ Mathematics
 ___ Vocational (describe) _____
 ___ Other (describe) _____
 ___ Social Studies
 ___ Science
 ___ Industrial Arts
4. Do you now receive any energy-related educational literature, publications, curriculum materials or other resources? ___ Yes ___ No
 If yes, please indicate title(s) and evaluate their usefulness in assisting you in the classroom. _____

B. VALUE OF ENERGY EDUCATION

1. Is energy education an important curriculum area for the 1980's? (check one)
 ___ Strongly Agree ___ Agree
 ___ Disagree ___ Strongly Disagree

C. ENERGY EDUCATION TEACHER ASSISTANCE

1. What kind of help do teachers need to incorporate energy education in the existing curriculum? (Rank order the needs, with 1 being the greatest need.)
 ___ Teachers need to learn more about energy and energy-related issues.
 ___ Teachers need to learn how energy information and energy-related issues can be incorporated effectively in the course of study.
 ___ Teachers need to learn how to develop energy education units of study.
 ___ Teachers need to receive sample lessons and activities on energy and energy-related issues.
 ___ Other _____
2. What resources do teachers need to incorporate energy education through the existing curriculum? (Rank order the needs, from 1-10 with 1 being the greatest need.)
 ___ Individual student materials and activities
 ___ Wall charts and bulletin board materials
 ___ 16mm films
 ___ Filmstrips
 ___ Video tapes: (check one) ___ 1/2 inch ___ 3/4 inch
 ___ Prepared ditto masters
 ___ Thermofaxed masters
 ___ Assembly programs
 ___ Classroom speakers
 ___ Teacher inservice
 ___ Other _____

3. What level of inservice preparation would be most helpful in providing teachers with energy education assistance? (Rank the types of inservice programs, with 1 being the most helpful.)

☐ School building
☐ School district
☐ County
☐ State
☐ Other _____

4. What would be the most desirable format for energy education inservice programs? (Rank the following formats, with 1 being the most desirable.)

☐ Half-day or less
☐ Full-day
☐ Series of sequential half-days for a given number of weeks
☐ Series of sequential evening sessions of two hours in length for a given number of weeks
☐ One or two weeks of full-day sessions during the summer
☐ Other _____

D. TEACHER PARTICIPATION

1. Are you willing to participate in the development of an energy education program with the Ohio Department of Education? ☐ Yes ☐ No
If yes, please indicate your preferences regarding your potential role(s).
(Check all that apply.)

☐ I would like to review and critique energy education materials.
☐ I would like to assist other teachers incorporate energy education in the existing curriculum.
☐ I would like to serve as a presenter at energy education inservice training programs.
☐ Other _____

2. Are there other areas regarding energy that you would like to learn more about, or that you believe your students should know more about?
(Examples include: energy sources, energy measurements, energy regulations, energy production, energy conservation, energy economics, or environmental issues and concerns.)

If you have developed energy education activities or units for specific grade levels or subject areas, we would appreciate receiving a copy of your work along with this completed survey. Please include comments and suggestions for effective implementation of this material.

Please mail this completed questionnaire by February 13, 1981 to:

Harry R. Meek, Manager
Energy Assistance Office
Ohio Department of Education
65 South Front Street, Room 419
Columbus, Ohio 43215

If you have questions, call Edmond LeBlanc at (614) 466-9046.

1/13/81

SUMMARY--TEACHER ENERGY EDUCATION SURVEY

1670 Surveys

A-2. LEVEL OF INSTRUCTION

(Responses: 1967)

K-3	18%	Elementary--43%
4-6	25%	
7-9	26%	
10-12	30%	Secondary--56%
K-12	1%	

A-3. SUBJECT AREA TAUGHT

(Responses: 4085)

Reading	16%
Language Arts	17%
Mathematics	17%
Social Studies	15%
Science	22%
Industrial Arts	1%
Vocational	3%
Special Education	12%
Home Economics	44%
OWA	9%
Agriculture	8%
Business	23%
Other	9%
Health	21%
Music	7%
Physical Education	12%
L.D.	6%
Spelling	5%
Driver's Education	4%
Writing	5%
Art	11%

A-4. DO YOU NOW RECEIVE ANY ENERGY-RELATED EDUCATIONAL LITERATURE, PUBLICATIONS, CURRICULUM MATERIALS OR OTHER RESOURCES?

(Responses: 1628)

Yes	26%
No	74%

B-1. IS ENERGY EDUCATION AN IMPORTANT CURRICULUM AREA FOR THE 1980's?

(Responses: 1659)

Stongly Agree	43%
Agree	53%
Disagree	3%
Strongly Disagree	2%

C-1. WHAT KIND OF HELD DO TEACHERS NEED TO INCORPORATE ENERGY EDUCATION IN THE EXISTING CURRICULUM?

a. Teachers need to learn more about energy and energy-related issues.

Listed as #1 39% of the time
#2 16% of the time
#3 15% of the time
#4 23% of the time
% of time ranked as #1 or #2 29%

b. Teachers need to learn how energy information and energy-related issues can be incorporated effectively into the course of study.

Listed as #1 25% of the time
#2 37% of the time
#3 26% of the time
#4 18% of the time
% of time ranked as #1 or #2 30%

c. Teachers need to learn how to develop energy education units of study.

Listed as #1 8% of the time
#2 19% of the time
#3 35% of the time
#4 37% of the time
% of time ranked as #1 or #2 13%

d. Teachers need to receive sample lessons and activities on energy and energy-related issues.

Listed as #1 28% of the time
#2 28% of the time
#3 24% of the time
#4 23% of the time
% of time ranked as #1 or #2 28%

C-2. WHAT RESOURCES DO TEACHERS NEED TO INCORPORATE ENERGY EDUCATION THROUGH THE EXISTING CURRICULUM?

a. Individual student materials and activities

#1 34%
#2 21%
#3 9%
% of time ranked as #1, #2, and #3 23%

b. Wall charts and bulletin board materials

#1 7%
#2 13%
#3 13%
% of time ranked as #1, #2, and #3 11%

c. 16mm films

#1 10%

#2 14%

#3 15%

% of time ranked as #1, #2, and #3 13%

d. Filmstrips

#1 5%

#2 9%

#3 12%

% of time ranked as #1, #2, and #3 8%

e. Video tapes

#1 3%

#2 4%

#3 7%

% of time ranked as #1, #2, and #3 1%

f. Prepared ditto masters

#1 4%

#2 11%

#3 12%

% of time ranked as #1, #2, and #3 8%

g. Thermofaxed masters

#1 2%

#2 3%

#3 7%

% of time ranked as #1, #2, and #3 3%

h. Assembly programs

#1 5%

#2 7%

#3 12%

% of time ranked as #1, #2, and #3 6%

i. Classroom speakers

#1 6%

#2 12%

#3 6%

% of time ranked as #1, #2, and #3 10%

j. Teacher inservice

#1 25%

#2 7%

#3 6%

% of time ranked as #1, #2, and #3 13%

C-2. RESOURCES RANKED ACCORDING TO RESPONSES AS #1, #2, and #3.

#1 Individual student materials and activities (23%)

#2 Teacher inservice (13%)

#3 16mm films (13%)

#4 Wall charts and bulletin board material (11%)

- #5 Classroom speakers (10%)
- #6 Prepared ditto masters (8%)
- #7 Filmstrips (8%)
- #8 Assembly programs (6%)
- #9 Video tapes (4%)
- #10 Thermofaxed masters (3%)

C-3. LEVEL OF INSERVICE

a. School Building

#1	60%	#1 and #2	43%
#2	21%		
#3	11%	#3 and #4	10%
#4	9%		

b. School District

#1	25%	#1 and #2	45%
#2	70%		
#3	9%	#3 and #4	6%
#4	2%		

c. County

#1	10%	#1 and #2	8%
#2	5%		
#3	76%	#3 and #4	40%
#4	3%		

d. State

#1	6%	#1 and #2	5%
#2	3%		
#3	4%	#3 and #4	43%
#4	80%		

C-4. MOST DESIRABLE FOR ENERGY EDUCATION INSERVICE

a. Half-day or less

#1	40%		
#2	22%		
#3	16%	#1, #2, and #3	27%
#4	11%		
#5	17%		

b. Full day

#1	25%		
#2	42%		
#3	20%	#1, #2, and #3	30%
#4	17%		
#5	5%		

c. Sequential half-days

#1	17%		
#2	20%		
#3	42%	#1, #2, and #3	25%
#4	16%		
#5	5%		

d. Sequential evenings

#1	5%	
#2	10%	
#3	14%	#1, #2, and #3 9%
#4	42%	
#5	25%	

e. One-two weeks during summer

#1	13%	
#2	7%	
#3	8%	#1, #2, and #3 9%
#4	15%	
#5	49%	

D-1. TEACHER WILLINGNESS TO PARTICIPATE IN STATE PROGRAM DEVELOPMENT

Yes 45%

No 55%

If yes, type of participation*

a. Review, critique materials	83%
b. Assist other teachers	35%
c. Inservice presenter	19%

*Totals more than 100%; overlap of interest in more than one area of participation.

D-2. TOPICAL AREAS OF TEACHER INTEREST IN LEARNING MORE ABOUT

Energy Conservation	32%
Environmental Issues	21%
Energy Sources	19%
Energy Economics	16%
Energy Production	12%
Energy Regulations	6%
Energy Measurements	3%

SUMMARY--TEACHER ENERGY EDUCATION SURVEY

1670 Surveys

A-2. LEVEL OF INSTRUCTION

1	K-3	359
2	4-6	490
3	7-9	518
4	10-12	580
5	K-12	20

A-3. SUBJECT AREAS TAUGHT

Reading	648
Language Arts	682
Mathematics	701
Social Studies	627
Science	892
Industrial Arts	51
Vocational	124

List each vocational subject

Agriculture - 10
 Auto Mechanics
 Business - 29
 Carpentry
 Construction Electricity
 Consumer Education - 2
 Consumer Homemaking
 Cooperative Office Education - 3
 Diesel Mechanics
 Director - 2
 Discussions of jobs, stories about different vocations - 2
 Distributive Education - 2
 Diversified Health Occupations - 2
 Environment Management
 Food Service
 Foundry
 Home Economics - 54
 Horticulture
 HVAC
 IOE - 4
 Machine Shop - 2
 Machine Trades
 Motorcycle/Marine Maintenance
 OWA - 11
 OWE - 9
 Sheet Metal
 Special Education - 15

Trade and Industrial--Technical - 2
Welding - 3
Work Study

Other 35a

List each subject area not covered under Vocational

Accounting - 3
Administration - 8
Affective Education
All subjects since it is elementary - 8
Art - 40
Astronomy
Audio Visual
Biology
Business Law
Career Education - 10
Classified Study Hall Monitor
Computer Programming - 3
Consumer Economics - 8
Coordinator
Counselor - 6
Current Issues - 2
Curriculum Director - 3
Data Processing
Driver's Education - 13
Earth Science
Educational Consultant
Elementary Education - 3
EMR - 9
Environmental Science
Foreign Language - 8
French - 9
Gifted and Talented Education - 6
Guidance - 8
HE English
Health - 74
Heating and Air Conditioning
History - 2
Homaking for adults
In-School Suspension Program
Instrumental Music - 9
Instructional Resources

Kindergarten - 3
 Latin
 Learning Disability - 23
 Librarian - 3
 Media Specialist - 4
 Music - 26
 Nutrition
 Occupational Orientation-Work Study
 Oceanography
 Philosophy - 2
 Physical Education - 44
 Planetarium Director
 Principal - 9
 Print Shop
 Pupil Community Assistant Specialist (PCA)
 Reading - 3
 Recordkeeping
 Science Fiction
 Self-contained classroom - 7
 Shorthand - 3
 Spanish - 8
 Speech - 3
 Spelling - 19
 Superintendent
 Survival Skills - 2
 Tutoring Academic Skills
 Typing - 8
 Visual Arts
 World Geography
 Writing - 18

A-4. Yes 431

No 1197

13

Log Numbers

6, 34, 39, 42, 45, 47, 48, 53, 54, 55, 56, 57, 59, 64, 65, 69, 70, 71, 76, 77, 78, 79, 86, 90, 91, 94, 95, 103, 117, 118, 134, 136, 139, 140, 143, 145, 149, 151, 154, 155,

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 575, 585, 588, 591, 600, 613, 617, 621, 630, 631, 632, 646, 648, 653, 658, 659, 660,
 662, 664, 668, 670, 673, 676, 681, 682, 685, 689, 695, 697, 699, 703, 704, 707, 708,
 710, 713, 714, 718, 719, 734, 737, 740, 747, 748, 755, 759, 761, 765, 767, 774, 786,
 788, 790, 791, 792, 799, 803, 823, 824, 825, 827, 830, 833, 834, 837, 841, 842, 843,
 854, 857, 874, 883, 886, 888, 905, 906, 914, 916, 917, 918, 919, 924, 927, 931, 934,
 941, 943, 945, 948, 949, 955, 963, 965, 971, 975, 984, 1001, 1002, 1005, 1007, 1008,
 1032, 1033, 1037, 1043, 1044, 1045, 1050, 1051, 1056, 1057, 1062, 1068, 1080, 1086,
 1087, 1089, 1094, 1099, 1101, 1104, 1105, 1106, 1107, 1108, 1109, 1110, 1111, 1112,
 1113, 1118, 1122, 1123, 1131, 1136, 1138, 1139, 1140, 1141, 1142, 1144, 1143, 1151,
 1153, 1155, 1156, 1157, 1158, 1159, 1178, 1181, 1185, 1189, 1190, 1196, 1197, 1204,
 1207, 1222, 1228, 1237, 1240, 1242, 1247, 1249, 1254, 1259, 1260, 1266, 1270, 1279,
 1283, 1284, 1285, 1296, 1299, 1303, 1305, 1309, 1312, 1315, 1317, 1318, 1319, 1324,
 1328, 1339, 1348, 1355, 1359, 1360, 1362, 1363, 1373, 1374, 1382, 1401, 1409, 1416,
 1425, 1432, 1433, 1435, 1436, 1437, 1439, 1442, 1443, 1444, 1445, 1446, 1449, 1451,
 1455, 1457, 1460, 1463, 1467, 1468, 1478, 1488, 1492, 1493, 1503, 1507, 1509, 1510,
 1511, 1512, 1513, 1514, 1515, 1517, 1518, 1527, 1535, 1540, 1547, 1548, 1549, 1550,
 1553, 1554, 1555, 1557, 1558, 1560, 1567, 1575, 1578, 1579, 1580, 1582, 1586, 1590,
 1598, 1601, 1603, 1606, 1610, 1611, 1623, 1635, 1642, 1643, 1644, 1646, 1648, 1649,
 1651, 1655, 1656, 1665, 1666, 1667, 1670

B-1. Strongly Agree 711
 Disagree 48
 Agree 873
 Strongly Disagree 27

C-1. TEACHER ASSISTANCE

a. 1 702
 2 230
 3 206
 4 321
 5 11
 b. 1 446
 2 523
 3 355
 4 257
 5 4
 c. 1 138
 2 267
 3 483
 4 519
 5 20

d.	1	501
	2	387
	3	338
	4	320
	5	8

Other

	1	57
	2	14
	3	5
	4	6
	5	19

List other

A comprehensive list of energy-related materials should be compiled and sent to teachers
 A weekly "tip sheet" on energy--short enough to be read quickly, yet can contribute
 Academic studies

Accurate information that is not slanted and bias

Administrators need knowledge of energy as well as government officials to give leadership

Any other information such as cost to the students as consumers

Audio visual materials, etc. - 3

Availability of teacher information

Because of the time factor, energy education needs to be incorporated into an existing subject area such as social studies

Board of Education must release money for materials (lab type situations)

Checked but no ranking

Community reinforcement

Conflicting data from utilities and conservation groups--needs to be sorted out by impartial body

Curriculum modified to provide adequate time

Develop an energy course that students could take specifically

Easily useful resource material--transparencies, etc.

Elementary teachers need a comprehensive science education

Energy materials

Energy related education should be limited to certain subject areas

Energy related field trips--list of available - 2

Experimental projects or "hands on" type of activities should be developed

Films/Filmstrips

Flexibility in curriculum to permit energy and energy-related issues

Have experts give program, not teachers

Hear or observe what is being done elsewhere in energy education

How to incorporate into existing curriculum

How to incorporate into reading program

How to read meters (demand), etc.

How to receive free material

I cannot answer this because I am not familiar with what is available to science teachers and social studies teachers

I could use these in social studies without much preparation time

I don't feel I can rank these. There is already a full curriculum. Let this area be learned at home--through other media.

I don't have enough time to teach the skills and feel energy should be taught in some other closer related field

I feel teachers must learn first to help inform their students

In school lectures--assembly programs

Incorporate as part of curriculum--grades K-12

Inservice meetings

Inservice programs to include all of the above mentioned

Inservice training

Inservice workshops

It could easily be related to the study of earth science, chemistry, economics, etc.
Is is a must for teachers to learn about energy and relate back to the students in a form of a class

It needs to be a school-wide project special

Local workshops to determine specific needs and ways of meeting those needs

Material and speakers

Materials are greatly needed

Materials needed to present to students

Materials--worksheets unit development

Money - 3

Money for equipment and field trips and seminars

Money--Our ladies can't understand why using less energy results in a larger bill

More time and teacher's aides

More time needed - 3

Most are too uninformed (and prejudiced by the media) to teach about energy

Need awareness of lack of energy-related knowledge

Need for home skill activities on conserving energy--"Hands on Activities"

Need materials to carry-out program

Need printed literature for distribution to students

Need source of information and ideas

Need the time to implement

Need to be aware of materials that are available for use about energy-related topics

Need to be conservative with personal and school supplies and energy

Need to learn how to correlate it to other areas without adding another course to the already crowded curriculum

Need to learn where to get energy information and activities

Newsletter of materials, contacts, references, etc.

No more films/filmstrips. We need viable learning activities. No more duplication of efforts.

No special courses

None (no ranking)

Not applicable - 2

Over teaching can drive the subject into the ground

Please write for information

Posters related to offices

Private industry needs to be involved in current material (funding, etc.)

Provide teachers with latest techniques, advances, suggestions in areas of energy conservation and developments on a regular basis

Publishers need to incorporate energy material in texts

Resource people from gas or electric company

Resources as listed in #B-2

Sample lessons might be constructed as "mini-units"

Seminars on Energy in America by Ohio Edison

Simple units for every grade level

Sources of information

Teachers-administrators must be convinced of the need for energy education. Also energy education must incorporate the scientific aspects of energy along with the social aspects. Therefore, it must be taught with a multiple subject area approach especially since no one area teacher can effectively know enough about the topic to do it justice without turning such an important relevant area into a run of the mill lesson.

Teachers don't have enough time to teach all that everyone thinks they should

Teachers need aides to help with this, i.e., recycling programs

Teachers need classroom time to teach our total curriculum which includes energy education in perspective

Teachers need curriculum revision support from school board and community mandates--help from supervisors

Teachers need energy-related materials at grade level 4-6

Teachers need extensive inservice training to incorporate such a program.

Teachers need funds to obtain energy-related materials and equipment
 Teachers need inservice training to help them understand the urgency of teaching energy education concepts
 Teachers need materials (such as activity books) to make the teaching interesting for the students, but at the same time to stress concepts to be learned
 Teachers need money to buy equipment in order to encourage solar energy projects
 Teachers need more time to do all this stuff
 Teachers need more time to incorporate energy into an already overloaded curriculum
 Teachers need state minimums which requires energy to be in the curriculum. Otherwise this program is at the mercy of local schools, administration and teachers discretion.
 Teachers need things for grade level on energy savings, example: coloring books
 Teachers need to be able to help develop "positive energy attitudes"
 Teachers need to be encouraged to devote time to energy because of its importance in tomorrows society
 Teachers need to be more aware of and question the source of energy-related materials
 Teachers need to become interested in science teaching itself
 Teachers need to know what resources are available to help them with energy education
 Teachers need to learn about energy through inservice training and energy project work
 Teachers need to learn more about how energy education can relate directly to the future needs of the individual and the nation
 Teachers need to realize the problem exists
 Teachers need to see a more positive attitude from administrators
 Teachers need to see that someone else in the world cares about energy conservation
 Teachers need to understand the importance of energy and related issues to recognize the need to teach it
 Teachers need to use energy efficiency in their own lives so that they can make an impression on their class
 Teaching materials suitable to grade level
 Textbooks need to be printed with matter concerning energy and conservation
 The greatest need is just to personally know the information -the utilization would then come more easily
 Time needed
 Time to incorporate into lesson plans
 To make aware of other energy alternatives and conservation
 Transparencies, filmstrips
 Use common sense
 We don't need it
 Where to get resource materials
 Where will we ever find the time? So much is being crowded into the curriculum now.
 Workshops for teachers on teaching energy and energy-related issues
 Would like to receive most recent literature
 16mm film on what children can do in managing energy and give concrete examples of what results would be
 Need to become energy conscience themselves
 Demonstrations

C-2. RESOURCES

a. 1 666
2 330
3 142
4 116
5 92
6 79
7 52
8 44
9 31
10 19

b. 1 138
2 208
3 205
4 226
5 200
6 159
7 150
8 110
9 80
10 71

c. 1 201
2 213
3 228
4 203
5 200
6 173
7 117
8 69
9 76
10 31

d. 1 92
2 134
3 188
4 232
5 227
6 217
7 163
8 135
9 72
10 40

e. 1 55
2 62
3 108
4 120
5 127
6 110
7 168
8 168
9 153
10 270

1/2 inch 254

3/4 inch 118

f. 1 81
2 165
3 180
4 198
5 166
6 169
7 176
8 169
9 128
10 49

g. 1 33
2 42
3 88
4 112
5 132
6 153
7 208
8 202
9 263
10 161

h. 1 90
2 105
3 110
4 118
5 112
6 124
7 150
8 197
9 219
10 218

i. 1 119
2 182
3 184
4 152
5 129
6 154
7 126
8 159
9 185
10 82

j. 1 480
2 109
3 89
4 61
5 90
6 77
7 74
8 102
9 104
10 280

Other	
1	26
2	7
3	1
4	2
5	1
6	0
7	3
8	0
9	1
10	3

List other

A good text--like vehicle for grades 10-12

Accurate information

All important

Any would be helpful

Checked but no ranking

Co-industrial workers

Conservation types education

Declare war against the utility companies

District energy curriculum revision objective. Multi-media, interdisciplinary units.

District-wide student contests on energy saving ideas

Energy information kits from Edison Electric Institute

Energy-related lab/shop equipment

Field trips, school goals and projects - 3

Field trips to energy plants - 2

Free materials which teachers are able to keep

I don't have the time

I would suggest that students get the chances to applicably experiment viable energy alternatives and conservational ideas. We need experiments geared towards these ideas, but materials are needed.

Include units in science books which are selected. What happens now is teachers are responsible for the curriculum to be taught.

Inclusion of energy in curriculum scope and sequence

Information on field trip potentials - 3

Lab equipment

Learning activities/games, simulations, materials for planet management debate

Limited on our primary level--something that we can use for reading on their level

Listing of field trip sites

Materials for our library

Modify present curriculum content by areas of priority. Something must be deleted or given less importance if something new is added.

Money for equipment

More time--we are trying to cover too many subjects

None (no ranking)

Not applicable - 2

Not everyone would be interested in this, therefore, few inservice meetings and time spent on units

On site experiences. Cooperate with electric and gas companies

Other teacher aides

Prepared units and materials

Projects

Provide us with materials and let us incorporate it into our course of study

Read

Reading materials on the topic of energy

Resource material--printed

Resource--reference material for teacher's use such as handbook broked down into various energy-related subject matter.

Samples of currently used curricula

Science fairs to arouse student and community interest

Slides

Small solar energy cells to make energy models

Sound and solid information

Teacher inservice programs should include all of the above listed resources plus field trips when available

Teachers need materials to put into the hands of students--activities need to be student centered

Texts

The interest and desire along with an understanding of issues and problems

The need is for quality materials, regardless of format. Quality student activities would be best. The others, of equal quality, have equal merit.

There are already too many ditto masters in the curriculum. Films or speakers would be the most interesting to students and would provide a "take-off point" for teachers.

Time

Time and Interest--I don't want to use manufactured material, I want time to do my own USDOE Simulators, citizen's workshops

We built our own solar system. Most of your "standard" resources are to childish.

We don't have an existing curriculum

Would like inexpensive solar cell or kits to build solar cookers

C-3. LEVEL OF INSERVICE PREPARATION

a.	1	936
	2	274
	3	136
	4	105
	5	2

b.	1	390
	2	880
	3	120
	4	18
	5	0

c. 1 148
 2 97
 3 983
 4 39
 5 1

d. 1 81
 2 41
 3 43
 4 1060
 5 23

Other
 1 46
 2 6
 3 2
 4 5
 5 13

List other

Aimed at combining grade levels so teachers of 7-9 could work together
 All departments should not be involved in this, i.e., band
 Area

Any would be helpful

City-County workshop--inservice day

Content area

COTA day, before school year begins

Departmental - 46

Discipline such as science

Elementary separate from secondary

Federal Government - 3

Fuel Companies, Electric Companies

Grade levels - 6

Home - 4

I believe county-wide inservice is the most cost effective, but inservice at any level is satisfactory

I don't feel an inservice is necessary - 3

I don't think inservice training would be that valuable

I don't want to teach it. I have enough to cover as it is.

I have little faith in inservice

Incorporate into existing County Inservice Day

Individual - 6

Industry

Institute, teacher center college - 2

Interdepartmental--specific units for specific disciplines

Intra-district

National

National meeting in Washington, D.C. (no ranking)

None - 2

Not applicable

Not sure this would be helpful

Possible combination of first three listed

Power companies

Professionals in area

Programs like the Kent State one

Read

Recruit interested for workshop held in own district

Region - 2

Released time

School district or county meetings by grade level
 Science Departments
 Send the information to the teachers in readable language for them to go over and decide
 what is useful for their grade level
 Should have geographic area flavor
 Smaller grouping would be better in this case
 Special interest groups
 Statewide TV would be good
 Stipends or released time for inservice, college credits
 Subject Area - 3
 Summer courses for credit
 Teacher programs
 The smaller the better
 There must be an interest and desire before inservice preparations could be meaningful
 TV educational channel or videotape to school
 University - 4
 VEPD
 Volunteer basis
 We already teach energy education in social studies and science
 We teach energy with science
 Workshops
 Special certificated teachers of Science
 The one from Oak Ridge was excellent
 Teacher workshop at local

C-4. MOST DESIRABLE FORMAT

a.	1	606
	2	337
	3	200
	4	115
	5	148
	6	4
b.	1	402
	2	561
	3	260
	4	163
	5	42
	6	0

c. 1 274
2 301
3 501
4 149
5 39
6 2

d. 1 68
2 133
3 169
4 474
5 244
6 3

e. 1 199
2 91
3 99
4 138
5 537
6 7

Other
1 45
2 9
3 3
4 1
5 1
6 1

List other

A two hour evening

After hours on an extra pay basis

All day Saturday workshop

An inservice that spans several different sessions usually encourages more sharing of ideas and I believe yeilds greater results

Any afternoon or days are OK, I don't like evening workshops after school--too tired

As best fits into individual school inservice schedules

As part of inservice teacher days--no extra time

At home study

Checked but no ranking - 2

Committee (city-wide) to preview available films, filmstrips, videotapes

Courses paid by and accredited at the University of Akron would be my preference

Depends if graduate credit is given--teachers would be willing to go the summer route, if in that particular building, after school 1 hour for 1-2 weeks

Depends on time needed for program

Depends on what you plan to present. How long do you need?

Depends on what you want to accomplish

Don't hold workshops during summer

Early dismissal and total two hour lengths for given number of weeks

Educational TV

Energy seminar for graduate credit

For some teachers who are interested in energy, any amount of time would be good. Other teachers will resent giving up any time. The inservice should be concise and well organized and not dragged out so that it wastes precious time.

Friday evening and Saturday - 7

Give handouts or written information for teachers to read on their own time, keep it brief

Graduate credit--1 week session

I am attending the energy workshop sponsored by Toledo Edison on 1-29-81

I like the mini-courses given in summer, but with college credit
 I would be willing to attend in summer if graduate credit could be earned
 I would have to see the material available to know how long it might take to present
 I would need to go to one session to see if more time is needed
 If it is properly set up a great deal can be accomplished in a $\frac{1}{2}$ day session
 If more than one session is needed, which to do a good job should be, college credit
 needs to be given
 If teachers are given credit, released time or stipends
 Individual study by each teacher wanting to incorporate "energy education" in present
 courses
 Individual teacher conferences with acknowledge experts on energy conservation, not
 with appointed flunkies
 Inservice day program
 Make a first class commercial quality 1 hour long
 Materials for each teacher to use on his own time
 Material to read and discuss in staff meeting small groups
 None for this year, inservices already planned
 Not applicable
 Not needed - 12
 Offer two weeks, require full day
 Optional for college credit
 Pamphlets on current events
 Primary-intermediate need not be as well informed as secondary teachers
 Read
 Release time for teachers to work on programs
 Required courses with credit, required time would, however, have to be school time
 Right after school 1-2 hours for time needed to cover materials
 Saturday workshops
 Send assembled materials to teachers
 Send the information to the teachers in readable language for them to go over and decide
 what is useful for their grade level
 Series given before school (speaker) or on TV
 Series of full day sessions dispersed throughout year
 Series of sequential half days for a given number of days at additional pay
 Series of sequential Saturdays for a given number of weeks
 Session for college credit
 Staff meetings by buildings which are required already once a week. Perhaps a $\frac{1}{2}$ day
 presentation on NEOTA Day for grades K-3, 4-6, 9-12 would help.
 Stipend paid by the board of education or the state department
 Summer session with college credit
 Summer time (full day with pay)
 Summer 2-3 weeks and follow-up
 This depends upon the program, what level the student and teacher works with, and the
 teachers background (I'd go nuts in a two week program designed for grade school
 teachers)
 Thursday and Friday - 10
 Too many times inservices are set up before they know how much time they will actually
 need. Then the instructors try to drag out to use time requested.
 TV educational channel or videotape to school
 Two full days of paid released time during the regular school year - 2
 Use NEOTA Day or staff meeting day
 Utilize existing inservice days for this purpose
 We already include it in our science classes
 We have already had an energy education inservice session and I don't feel there is a
 need for more for lower elementary teachers
 Wednesday and Thursday - 5
 Weekend workshop
 Workshop--week
 Workshops

$\frac{1}{2}$ day every 10 years
 $\frac{1}{2}$ days for full week during summer
 $\frac{1}{2}$ hour presentation on public TV
 Offer through university with credit
 Would depend upon decision of local school board
 $\frac{1}{2}$ or full day sessions on Saturdays during school year

D-1. Yes 700

a. 581
 b. 247
 c. 152
 Other 66

List other

Act as a facilitator with science department heads
 After a program is presented, I would like the privilege of critiquing what I would like to use in my grade room
 After I learned more about energy education perhaps I would be able to do more
 Area of greatest need
 As a teacher I choose not to spend my time in development of programs, but do cooperate with implementations in class when/if applicable
 As department chairman, I will help teachers implement what is available
 As part of school committee on energy management
 Be informed of what's available
 Being in the AV Department, make the teachers aware of any energy education materials that come in
 Checked but no ranking - 2
 Computer simulations and applications
 Contract Franklin County Teacher Center
 Develop classroom materials
 Energy education from State DOE or Federal Energy Department
 First I would like to attend inservice sessions so I can learn myself - 2
 Help in setting-up inservice, anything but presenter
 Help plan inservice
 How to apply/write energy grants
 I already use government published material in the classroom
 I am not sure, depends on how involved this might be
 I am primarily concerned about energy education as it relates to mathematics for jobs and being an educated consumer

I am willing to "try out" materials in my classroom
 I incorporate this subject matter into science and social studies whenever possible-- conservation, etc.
 I have been trained for this kind of activity by Virginia Polytechnical Institute and DOE
 I have more things to teach already that are more important
 I have teachers on my staff that could be interested
 I need to know more energy savings
 I would be available for summer workshops
 I would be interested in assisting on a committee
 I would be interested in helping to develop an energy education program
 I would be willing to use and incorporate the energy education materials in my existing curriculum
 I would like to attend energy education inservice workshops
 I would like to attend inservice for math use and then I could review and critique material
 I would like to attend an inservice where I'd learn about energy education. It should present both sides from environmentalist viewpoint and from energy procedures viewpoint. Then it should be presented objectively to us as energy users.
 I would like to develop a unit grant for the grade 8 students at the local level
 I would like to help develop energy education units
 I would like to identify objectives that can be tied into all disciplines so that they would be interrelated in energy aspects
 I would like to interview industry (especially the utilities) for their input and possible funding
 I would like to know more about energy education to help my students
 I would like to know where the program is at currently and make a further decision later
 I would like to use a pilot energy program in my school
 I would like to use the materials in one of my classes
 I would like to work for a corporation who is interested in unbiased energy education and who would hire qualified professionals to develop and disseminate curriculum related materials.
 I would like to write a grant
 I would much rather attend an energy program that has been developed by willing participants
 I would possibly be interested in incorporating an energy program into the curriculum given the right situation
 If I could be properly trained, I would like to set up workshops/in-services
 If we knew the answers to this critical issue, I would support and advocate "that authority" as a basis for giving an inservice program
 Introducing programs to different schools
 Just work within my own classroom
 Keep in mind we only have so many hours in a day and a lot of material to cover so unit should be "short and sweet"
 Learn more about presenting it to youngsters in their curriculum
 Occupations in the field related to energy
 Once knowledge is obtained with regard to energy and energy systems
 Only if I had additional training and time to review materials
 Participate as it applies to my classes
 Research projects
 Role would depend on time/conditions required
 Science teachers should be involved
 Seek resource people
 Solar workshop on radio and TV about energy problems and solutions
 The school day (instructional) has been slashed by so many demands that little is left for covering materials now
 Try trial program in class
 We are adding a physical science course for 1981-82 school year, which could incorporate energy topics. Possibly could pilot some materials.

Willing to present classroom curriculum at 6 or 7 grade level in pilot program (with administrative approval)
 Work for graduate credit through a local university, example: WSU Institute
 Would try to attend workshop on energy locally
 My fee is \$10.00 per hour minimum
 Particularly as a resource person, K-12
 To do the other 2 I would need released time as would the other teacher
 Apply materials in classroom and evaluate student comprehension and interest
 I have some general knowledge concerning automobiles and energy use

No 854

Log Numbers

3, 9, 14, 17, 29, 30, 32, 33, 34, 35, 36, 37, 39, 40, 41, 42, 43, 44, 45, 49, 50, 51,
 52, 53, 54, 55, 56, 57, 58, 61, 68, 70, 71, 76, 77, 78, 79, 81, 82, 85, 86, 87, 88, 89,
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 1524, 1526, 1527, 1532, 1540, 1545, 1546, 1547, 1549, 1550, 1552, 1553, 1554, 1556,
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 1602, 1604, 1605, 1618, 1627, 1629, 1633, 1634, 1635, 1640, 1641, 1642, 1643, 1644,
 1646, 1647, 1648, 1649, 1653, 1654, 1655, 1656, 1659, 1661, 1662, 1666, 1667

D-2. List other areas

Energy Sources - 222

Energy Measurements - 41

Energy Regulations - 69

Energy Production - 140

Energy Conservation - 371

Energy Economics - 183

Environmental Issues and Concerns - 247

Any or all of the above listed - 96

Actually at primary level I can't use much of this and if I do it has to be very simple
 Alcohol production - 3

All are important areas and should be emphasized depending on level of the students for
 guidance in what is appropriate to present

Any suggestions that apply to sixth grade level would be appreciated

Areas and depth depend on grade level

Builders who incorporate the various devices

Career opportunities in energy research and technology

Chemical

Chemistry/physics of energy

Classroom, conserve energy in a business office

Coal as an energy source, this being a coal community

Comparisons of energy with one another

Condensed material for energy education

Consequences and predictions of energy waste and usage at present rate

Conservation of natural resources. Activities that 5th graders may participate in,
 leading towards an appreciation of what they can do about the future.

Construction of energy saving or collecting equipment

Cost to consumer

Developing public awareness

Development particularly in the area of experimentation in building trades, transporta-
 tion and utility toward self sufficiency in energy

Efficiency in cost to produce and cost for consumer use

Electric cars

Energy alternatives - 29

Energy and social concerns

Energy and the individual

Energy costs and variety of energy

Energy efficiency of existing machines

Energy experimentation and construction methods and procedures

Energy flour patterns in agriculture, grain, livestock, etc. and utilization of normally wasted energy

Energy from the earth

Energy is discussed at different times during the courses of World Geography and Ohio History and Earth Science

Energy issues related to global problems, high school social studies, decision making skills in energy issues

Energy items in general may be helpful

Energy law and legal issues

Energy plants power

Energy-related careers

Energy research

Energy resources - 2

Energy resources for homes--wind power, solar energy, berming, etc.

Energy saving equipment--use and care

Energy supplies and future supplies

Energy supplies and their geological origins

Energy that entails risks (health)

Energy used in the automobiles

Establishing habits to conserve energy

Everyday practical helps to saving energy

Explain how government regulations such as environmental laws affect energy. Explain why development of energy in Canada has ground to a halt.

Family budget--emergency costs

Forms of present available energy programs and potential inexpensive materials for future energy programs

Fusion power - 3

Futuristic study - 9

Gasohol - 2

General information which can be used in classrooms would be helpful

Geology of fossil fuels - 3

Geothermal energy - 2

Governmental Law and Control of Energy Regulations and Resources

Heating with wood

High school students might find a course examining various energy saving devices on the market (comparison shopping with energy conservation the goal)

History of energy development and use in USA

How energy is produced from the different sources

How estimates about reserves are calculated. Effects of deregulation proposed under current administration.

How it affects us all and how we can take control of the situation

How Ohio fits into the national picture, what are the facts on Ohio usage and sources

How other countries are way ahead of us in solar and geothermal energy, and what we could do to catch up

How to analyze ads, films, "free materials" for biases, propaganda

How to make economic energy saving decisions

I am interested in information about all energy-related topics. It is important to stay on top of all new events in this field of study.

I believe that gifted and talented students need to be aware of the problems as well as being taught the thought processes to attempt to solve these problems. A general awareness would probably be most beneficial to begin with.

I don't even know what this is all about - 2
 I don't know what I need to know
 I feel that K-2 energy education is extremely limited. We are flooded with energy education by all utility companies and news media.
 I need more information about areas of energy before I can intelligently ask a question
 I need to be completely updated on energy, its uses, the laws, etc.
 I think that students should learn about as many aspects of energy use and conservation as possible, integrated with science, health, social studies, and other subjects in the curriculum. This is an important issue to me, and I now incorporate energy ideas in teaching our present curricula. I read much about energy.
 I think the parents need it more than most of the students
 I would be interested in the development of wind power and how it can be used in generating electricity for the home
 I would like to have a fast readable format that takes a small amount of time to prepare
 I would like to see someone in the area, either through career education or colleges who could come into the classrooms and demonstrate models of solar energy; or land models showing soil erosion and conservation. It is hard for classroom teachers to actually build and store models for demonstrations.
 In home efficiency
 In the home - 8
 It probably should be a required course with an adapted course of study by each county or city board
 It seems that in math, with the appropriate materials, it should be possible to teach math concepts while making students aware of the energy situation
 Job opportunities
 Jobs related to energy
 Kits for students to study other forms of energy
 Legislative controls and non-controls
 Materials applicable to the primary level
 Materials we used needed updating badly
 Measuring instruments we ourselves can use and observe
 More application of grass-roots involvement and alternatives
 More facts about the EPA monopoly
 My day is already too full. I don't believe first graders need this. They need basics.
 My feeling is that the students are living in a history making society in regards to energy as its problem progresses, therefore, just point out current events are most helpful
 My primary EMR children should know more about energy conservation and can practice what they've learned
 Nature and energy
 New energy conserving equipment for residential use
 New research and conservation methods employed
 Nuclear energy - 19
 Our gifted students need to learn about all energy, they will undoubtedly be attempting to solve the existing and future energy problems
 Petroleum
 Pollution information - 3
 Practical demonstrations
 Practical home skills and what materials to use or not use
 Proper installation of insulation
 Radiation
 Research done on bio-mass yield and microbiological advances
 Role of big business (example: oil companies) in the entire energy cartel. Realistic energy situation upon us--How other factors such as housing, over population, transportation system, etc. effect energy demand.
 Saving money is the one overriding issue for low income adults
 Send what you think we should do, if approved, we will do
 Social studies skills and integration into lessons
 Social values

Societal pressures regarding energy usage

Solar energy - 42

Solid full use from waste products

Statistics regarding all types of energy

Students know that people need energy. The population explosion and what can be done to limit population growth should be stressed. If the population were reduced, so would the energy demand.

Students should become aware of all aspects of energy

Supply and demand of oil

Technical use of energy with possibilities of alternate types of energy for practical applications

The efforts that other countries are making to conserve energy

The need for mathematics

The role of government in energy development and distribution. The corporate rule on development, research and pricing.

The students in our area need a greater knowledge of the energy picture. They only know that there are supplies of coal and oil in the area they feel will last forever.

The willingness to believe that an energy crisis exists and we'd better start doing something positive to curb waste

These examples include quite a lot, but once you got into the program you add on more areas

Truth of nuclear reactors (pros and cons)

Types of energy

Use of electricity production

Use of energy - 2

Utility advertising/propaganda

Waste of natural resources

Ways to save energy at school

Ways to save energy--house built at the Ohio State Fair would be a treat for them to see. Underground houses, solar heated houses, etc.

We do a county-wide conservation poster contest at the 5th grade level, maybe this to could be expanded and done in more depth

We do have an "energy program" and the problem is getting students to have a first hand look or lab experience at energy

What research projects are planned for the future--solving the energy problems faced from depleted sources

What we need are projects/activities related to these areas

Wind - 2

World supply verses domestic supply

World use

Yes, how big is the crisis. Are we being lied to.

Yes, many areas which are important. The students should have these various areas within the courses already presented.

An input of energy gives an output of two or more kinds of energy. We generally use only one energy unit of output. How can the additional output be utilized better?

Energy being created from vegetable matter and other things already available

Production of alternate forms of cheaper energy

Values clarification when presented with the often conflicting concepts in this area

Energy and our everyday lives

Energy efficiency, limitations, trends, etc.

Yes. I believe that students should become aware of our present energy crisis in the US

I feel the environmental implications and choices are crucial to a successful energy education program

Decontrol